

US9699444 B2 Claim 26	Roku TV™
26. An apparatus comprising:	<div>Roku TV™</div> <div>User Guide</div> <div>Version 10.0</div> <div>For United States</div> <div>English</div> <div></div>

	<p>Publication date: 30-April-2021</p> <p><https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf></p> <p>Roku TV™ is on an apparatus.</p> <p>The reference includes subject matter disclosed by the claims of the patent after the priority date.</p>
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a storage adapted to: store one or more image frames; and	<ul style="list-style-type: none"> • Frame rate conversion – <i>Only on select models. Each TV brand uses a different name for this option. <u>Adjusts the amount of motion processing applied to the video signal.</u> A higher setting results in more smoothing, but can cause undesirable picture artifacts in certain types of content. Each Picture mode has a different default setting.</i> <p><https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf></p> <p>The reference describes a storage adapted to store one or more image frames.</p> <ul style="list-style-type: none"> • Storage = Adjusts the amount of motion processing applied to the video signal
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a processor adapted to: obtain a first image frame from a first video stream;	<ul style="list-style-type: none"> • Frame rate conversion – <i>Only on select models. Each TV brand uses a different name for this option. <u>Adjusts the amount of motion processing applied to the video signal.</u> A higher setting results in more smoothing, but can cause undesirable picture artifacts in certain types of content. Each Picture mode has a different default setting.</i> <p><https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf></p> <p>The reference describes a processor adapted to obtain a first image frame from a first video stream.</p>

	<ul style="list-style-type: none"> • Processor = Adjusts the amount of motion processing applied to the video signal
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<p>generate a modified image frame by performing at least one of expanding the first image frame, shrinking the first image frame, removing a portion of the first image frame, stitching together the first image frame with a second image frame, inserting a selected image into the first image frame, and reshaping the first image frame, wherein the modified image frame is different from the first image frame;</p>	<ul style="list-style-type: none"> • Local dimming - <i>Only on select models:</i> Sets the amount of dimming applied to multiple areas of the screen's backlight intensity. This setting can make dark areas darker without affecting the brightness of light areas. • Dynamic contrast - <i>Only on select models:</i> Automatically adjusts the backlight level to achieve the optimum contrast and prevent excessive differences between light and dark areas of the screen. • Micro contrast - <i>Only on select models:</i> Improves image contrast. <p><https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf></p> <p>The reference describes generating a modified image frame by performing at least one of expanding the first image frame, shrinking the first image frame, removing a portion of the first image frame, stitching together the first image frame with a second image frame, inserting a selected image into the first image frame, and reshaping the first image frame, wherein the modified image frame is different from the first image frame.</p> <ul style="list-style-type: none"> • generate a modified image frame + reshaping the first image frame = Sets the amount of dimming applied to multiple “local” areas of the screen’s backlight intensity

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<p>generate a bridge frame, wherein the bridge frame is a solid color, wherein the bridge frame is different from the first image frame and different from the modified image frame;</p>	<ul style="list-style-type: none"> • Black frame insertion - <i>Only on select models that also have the local dimming feature. Each TV brand uses a different name for this option. Reduces motion blur caused by the refresh rate of the screen. Enabling this feature <u>inserts black frames between picture frames</u> in a way that improves the clarity of fast moving objects. It provides an improved viewing experience for video games and sporting events, but reduces the brightness of the picture. You can select settings of Low, Medium, High, or Off to achieve the desired picture quality.</i> <p><https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf></p> <p>The reference describes generating a bridge frame, wherein the bridge frame is a solid color, wherein the bridge frame is different from the first image frame and different from the modified image frame.</p> <ul style="list-style-type: none"> • generate a bridge frame = black frames between picture frames
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<p>display the modified image frame; and</p>	<ul style="list-style-type: none"> • Local dimming - <i>Only on select models: Sets the amount of dimming applied to multiple areas of the screen's backlight intensity. <u>This setting can make dark areas darker without affecting the brightness of light areas.</u></i> • Dynamic contrast - <i>Only on select models: Automatically adjusts the backlight level to achieve the optimum contrast and prevent excessive differences between light and dark areas of the screen.</i> • Micro contrast - <i>Only on select models: Improves image contrast.</i>

	<p><https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf></p> <p>The reference describes displaying the modified image frame.</p> <ul style="list-style-type: none"> display the modified image frame = This setting can make dark areas darker without affecting the brightness of light areas
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display the bridge frame.	<ul style="list-style-type: none"> Black frame insertion - <i>Only on select models that also have the local dimming feature. Each TV brand uses a different name for this option. Reduces motion blur caused by the refresh rate of the screen. Enabling this feature <u>inserts black frames between picture frames in a way that improves the clarity of fast moving objects</u>. It provides an improved viewing experience for video games and sporting events, but reduces the brightness of the picture. You can select settings of Low, Medium, High, or Off to achieve the desired picture quality.</i> <p><https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf></p> <p>The reference describes displaying the bridge frame.</p> <ul style="list-style-type: none"> display the bridge frame = inserts black frames between picture frames in a way that improves the clarity of fast moving objects
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27. The apparatus of claim 26, wherein the **bridge frame is black**.

- **Black frame insertion** - *Only on select models that also have the local dimming feature. Each TV brand uses a different name for this option.* Reduces motion blur caused by the refresh rate of the screen. Enabling this feature inserts black frames between picture frames in a way that improves the clarity of fast moving objects. It provides an improved viewing experience for video games and sporting events, but reduces the brightness of the picture. You can select settings of **Low, Medium, High, or Off** to achieve the desired picture quality.

<<https://image.roku.com/c3VwcG9ydC1B/Roku-TV-User-Guide-10-0-en-US-.pdf>>

The reference describes the bridge frame is black.

- **bridge frame is black = black frames**